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Applicability of chemical vapour polishing of additive manufactured parts to meet production-quality - DTU Orbit (08/11/2017)

Applicability of chemical vapour polishing of additive manufactured parts to meet production-quality

The Fused Deposition Modelling (FDM) method is the most rapidly growing Additive Manufacturing (AM) method[1]. FDM employs a 2.5D deposition scheme which induce a step-ladder shaped surface definition [2], with seams of the individual layers clearly visible[3]. This paper investigate to which extend chemical vapour polishing can be applied to eliminate the layered surfaces from FDM, so that a polished surface quality is obtained. It is quantified to what extend parts can be vapour polished and how geometrical and mechanical properties alter. The fundamental question is whether the surfaces of FDM manufactured parts can be taken from their current quality into the precision engineering domain.

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